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PERFORMANCE ORIENTED PACKAGING TESTING OF AN/SSQ-36A SONOBUOY LAUNCH CONTAINER (SLC) FOR PACKING GROUP II SOLID HAZARDOUS MATERIALS

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This Performance Oriented Packaging (POP) test was conducted to ascertain whether the AN/SSQ-36A Sonobuoy Launch Container (SLC) (Drawing 010-159 2200-00) meets the Packing Group II requirements specified by the Code of Federal Regulations, Title 49 CFR, Parts 106 through 178, dated 1 October 1992. The packaged commodity used for the test was two inert AN/SSQ-36A Sonobuoys and launch packs weighing 12 kg (26 pounds). This represents the current maximum commodity weight. Gross weight of the loaded container was 14 kg (31 pounds). The test results indicate that the container has conformed to the POP requirements.

14. SUBJECT TERMS

POP Test of AN/SSQ-36A Sonobuoy Launch Container (SLC)

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INTRODUCTION

This Performance Oriented Packaging (POP) test was performed to ascertain whether the AN/SSQ-36A Sonobuoy Launch Container (SLC) (Drawing 010-159-2200-00) meets the Packing Group II requirements specified by the Code of Federal Regulations, Title 49 CFR, Parts 106 through 178, dated 1 October 1992. The packaged commodity used for the test was two inert AN/SSQ-36A Sonobuoys and launch packs weighing 12 kg (26 pounds). This represents the current maximum commodity weight. Gross weight of the loaded container was 14 kg (31 pounds).

Due to unavailability only one container was used for testing. This is less than the number required by the regulations. Approval for this deviation has been granted by the Under Secretary of Defense, Memorandum for the Joint Logistics Commanders dated 22 February 1990.

TESTS PERFORMED

1. Base Level Vibration Test

This test was performed in accordance with Title 49 CFR 178.608. The container was placed on a repetitive shock platform which has a vertical linear motion of 1-inch double amplitude. Movement of the container was restricted during vibration in all but the vertical direction. The frequency of the platform was increased until the container left the platform 1/16 of an inch at some instant during each cycle. Test time was 1 hour.

2. Stacking Test

This test was performed in accordance with Title 49 CFR 178.606. The container was subjected to a force applied to its top surface equivalent to the total weight of identical packages stacked to a minimum height of 3 meters (including the test container). A weight of 29 kg (64 pounds) was stacked on the test container. The test was performed for 24 hours. The weight was then removed and the container examined.

3. Drop Test

This test was performed in accordance with Title 49 CFR 178.603. Six drops were performed from a height of 1.2 meters (4 feet) in the following orientations (three drops for each orientation):

a. Horizontally.

b. Diagonally on the edge between the cover assembly and the top ring of the container.

PASS/FAIL

1. Base Level Vibration Test

The criteria for passing the base level vibration test is outlined in Title 49 CFR 178.608(c): No test sample should show any deterioration which could adversely affect transportation safety or any distortion liable to reduce packaging strength.

2. Stacking Test

The criteria for passing the stacking test is outlined in Title 49 CFR 178.606(d): No test sample may show any deterioration which could adversely affect transportation safety or any distortion likely to reduce its strength, cause instability in stacks of packages, or cause damage to inner packagings likely to reduce safety in transportation.

3. Drop Test

The criteria for passing the drop test is outlined in Title 49 CFR 178.603(f): A package is considered to successfully pass the drop tests if for each sample tested, no rupture occurs which would permit spillage of loose explosive substances or articles from the outer packaging.

TEST RESULTS

1. Base Level Vibration Test

Satisfactory.

2. Stacking Test

Satisfactory.

3. Drop Test

Satisfactory.

DISCUSSION

1. Base Level Vibration Test

The input vibration frequency was 4.3 Hz. Immediately after the vibration test was completed, the container was removed from the platform, turned on its side and inspected. No unfavorable distortion or deterioration was observed.

2. Stacking Test

The container was inspected after the 24-hour period was over. No unfavorable distortion or deterioration was observed.

3. Drop Test

After each drop, the container was inspected. The inert Sonobuoys and launch packs were completely retained by the container.

REFERENCE MATERIAL

A. Code of Federal Regulations, Title 49 CFR, Parts 106-178.

B. Bureau of Explosives Tariff No. BOE 6000K Hazardous Materials Regulations of the Department of Transportation by Air, Rail, Highway, Water including Specifications for Shipping Containers.

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Crane, IN 47522-5000

TEST DATA SHEET

POP MARKING: UN 1H2/Y14/S/**/USA/DOD/NAD **YEAR LAST PACKED OR MANUFACTURED	
Nomenclature: AN/SSQ-36A Sonobuoy Launch Container (SLC)	
Type: 1H2	**NSN:** TBD
Drawing Number or P/N: Drawing 010-159-2200-00	**Outer Packaging Material:** Plastic
Dimensions: 5.375" dia x 39.5" L	**Gross Weight:** 14 kg (31 pounds)
Closure (Method/Type): Removable Cover	**Tare Weight:** 2 kg (5 pounds)
Additional Description:	
PACKAGED COMMODITY:	
Nomenclature: See table 1	**NSN(s):** See table 1
United Nations Number: See table 1	
United Nations Packing Group: II	
Physical State (Solid, Liquid, or Gas): Solid	
Vapor Pressure (Liquids Only): N/A **At 50 °C:** N/A **At 55 °C:** N/A	
Consistency/Viscosity: N/A	**Density/Specific Gravity:** N/A
Amount per Package: See table 1	**Flash Point:** N/A
Net Weight: See table 1	
PACKAGED COMMODITY USED FOR TEST:	
Name: Two Inert Sonobuoys w/Launch Packs	**Physical State:** Solid
Consistency: N/A	**Density/Specific Gravity:** N/A
Test Pressure (Liquids Only): N/A	**Net Weight:** 12 kg (26 pounds)
Additional Description: The net weight is the current maximum commodity weight.	

N/A = Not Applicable
TBD = To be Determined

TABLE 1
Commodities Approved for Shipping in the AN/SSQ-36A Sonobuoy Launch Container

NALC/ DODIC	NSN	Commodity Nomenclature	Packing Document Number	Haz Class/Div	UN Number	Units/ Package	Total Net Weight kg (lb)	Total Gross Weight kg (lb)
N/A	N/A	AN/SSQ-36A Sonobuoy w/Launch Packs	(36180) 010-204-2225-00	1.4S	0323	2	12 (26)	14 (31)

N/A = Not Assigned